

Characteristics of Fully Screen-printed Paper-based Chromatographic Electrochemical Biosensor

Isao Shitanda, Tasuku Yamaguchi,
Yoshinao Hoshi, Masayuki Itagaki

*Department of Pure and Applied Chemistry,
Faculty of Science and Technology,
Tokyo University of Science
2641, Yamazaki, Noda, Chiba 278-8510, Japan*

E-mail address: shitanda@rs.noda.tus.ac.jp (I. Shitanda)

There has been a considerable recent interest in paper based biosensors, owing to low price, good flexibility. For example, Nie et al. fabricated microfluidic paper-based electrochemical devices that are capable of quantifying the concentrations of various analytes in aqueous solutions, including biological fluids such as urine, serum and blood¹. Vella et al. fabricated microfluidic paper-based device that measures two enzymatic markers of liver function and total serum protein².

Screen-printing technique has been widely applied to fabrication of electrochemical devices such as dye-sensitized solar cells³, biosensors⁴⁻⁷ and corrosion sensor⁸ since it has following merits: (a) drawing precise pattern of μm order, (b) a wide variety of inks, (c) high reproducibility, and (d) low cost.

Recently, we fabricated a fully screen-printed paper-based chromatographic biosensor chip for glucose detection⁸.

In this study, we prepared several screen-printed paper-based biosensor chip with different structures and investigated its characteristics by electrochemical impedance spectroscopy.

References

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